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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,844	07/16/2003	Janet Patterson	73537 (1328)	1787

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Gregory J. Koerner
Redwood Patent Law
1291 East Hillsdale Boulevard
Suite 205
Foster City, CA 94404

EXAMINER

NGUYEN, DONGHAI D

ART UNIT

PAPER NUMBER

3729

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/621,844

Applicant(s)

PATTERSON, JANET

Examiner

Donghai D. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-26 and 34-50 is/are pending in the application.
- 4a) Of the above claim(s) 1-21 and 34-50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group II (Claims 22-26 and 34-50) and Species I (drawn to Figs. 1 and 2) in the reply filed on December 21, 2004 is acknowledged. However, upon further review that claims 34-50 are readable on nonelected Species II, which are independent or distinct from the elected Species I, because Claims 34-38 (require two lids) are readable on Species II, Claims 39-41 (have no substrate) are readable on Species III, etc. Further applicant is not entitled to examination of multiple independent inventions in one application. For above reasons Claims 34-50 are withdrawn from consideration as being drawn to nonelected Species II, and the restriction is hereby made final.
2. Claims 34-50 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,635,754 to Strobel et al in view of US Patent No. 6,303,997 to Lee.

Regarding claim 22, Strobel et al disclose a method of shielding an integrated circuit device comprising forming package layers each having radiation shielding base (510, 810, etc.), a package (500, 800, etc.) and circuit die (see Strobel 580, 880, etc.; Figs. 4D, 5D, etc.), and a lid (570/870) coupling to a package layer. Lee teaches to couple/stack multiple integrated circuits together to form a thin and semiconductor package having improved electrical and thermal performance. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Strobel by providing an integral stack of at least two or more package layers together as taught by Lee as to form a desired semiconductor package and improving electrical and heat dissipating performance of the integrated circuit would result (see Lee Col. 1, line 6-13 or Col. 2, lines 35-45).

Regarding claims 23 and 24, noting Strobel et al disclose the lid and radiation shielding bases are formed from a high Z material (Fig. 4D).

Regarding claims 25 and 26, noting Strobel et al disclose circuit dies receive an amount of radiation less than the total dose tolerance of the second circuit die (Col. 7, lines 62-67).

5. In alternative, Claims 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Strobel et al.

Lee discloses a method of shielding an integrated circuit device comprising: forming a first package layer (100) comprising a first base (60), a first package (20 and 50) and a first circuit die (10); forming a second package layer comprising a second base (60), a second package (60) and a second circuit die (10); coupling a bottom of the first package layer to a top of the second package layer (See Fig. 3). Lee does not disclose the base is radiation shield and

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the step of coupling a lid to the first package layer. Strobel et al teach the radiation shield base (510/810) and coupling a lid (570/870) to the first package layer (500/800 see Strobel Figs. 4D and 5D) for withstanding the thermal and radiation hazards (see Strobel Col. 3, line 65 to Col. 4, line 21). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Strobel et al including base of radiation shield and the lid onto the invention of Lee in order to form a desired base structure for preventing radiation penetrating through the integrated circuit device.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art references cited for the teachings of radiation shielding an integrated circuit.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghai D. Nguyen whose telephone number is (571)-272-4566. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571)-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DN
February 2, 2005

 2/2/05
MINH TRINH
PRIMARY EXAMINER